UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,153	12/31/2003	Mark Fine	134149	1808

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ALCATEL LUCENT
(FKA ALCATEL INTERNETWORKING, INC.)
INTELLECTUAL PROPERTY & STANDARDS
3400 W. PLANO PARKWAY, MS LEGL2
PLANO, TX 75075

EXAMINER
DUONG, FRANK

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/751,153	FINE ET AL.
	Examiner	Art Unit	
	Frank Duong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>12/31/07</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-15* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-15* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *12/31/07* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to communications dated 12/31/03. Claims 1-15 are pending in the application.

Information Disclosure Statement

2. The information disclosure statement filed 03/06/07 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application file.

Claim Objections

3. Claims 7, 9 and 11 are objected to because of the following informalities: The first occurrence of the acronym "DVMRP", commonly recited in those claims, is required to spell out.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Pusateri

(Distance Vector Multicast Routing Protocol, Internet Draft, pages 1-62, August 1998) (hereinafter "Pusateri").

Regarding **claim 1**, in accordance with Pusateri reference entirety, Pusateri discloses an enhanced Distance Vector Multicast Routing Protocol (DVMRP) method for regulating one or more multicast streams in a first destination-based forwarding router (*see page 1; Abstract and thereinafter*), comprising the steps of:

(a) transmitting a DVMRP route report to a first branch interface detected (*page 19, section 3.4.5, Sending Route Reports, it is disclosed "all of the active routes must be advertised over all interfaces with neighbors present each route report interval"*); and

(b) for each new branch interface detected: (i) transmitting, to each branch interface previously detected, a flash update for preventing one or more neighbor multicast routers from expressing dependency on the first destination-based forwarding router (*page 19, section 3.4.5, Sending Route Reports, it is disclosed "Flash updates reduce the chances of routing loops and black holes occurring when source networks become unreachable through a particular path. Flash updates need only contain the source networks that have changed;"* and (ii) transmitting, to the new branch interface, a restricted route report for preventing one or more neighbor multicast routers from expressing dependency on the first destination-based forwarding router (*page 19, section 3.4.5, Sending Route Reports, it is also disclosed "When a router sees its own address in a neighbor probe packet for the first time, it should send a unicast copy of its entire routing table to the neighbor to reduce start-up time. Reports should not be sent to a neighbor until a router has seen its own address in the neighbors Probe router list."*)

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Pusateri also discloses wherein the DVMRP route report comprises routes accessible through one or more interfaces of the first destination-based forwarding router enabled with the enhanced DVMRP method (*see page 19, section 3.4.5, Sending Route Reports pertaining the discussion of unreachable through particular path and Route Dependencies discussed on page 18, section 3.4.4 and thereinafter*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales discussed above), Pusateri also discloses wherein the restricted route report omits reference to routes accessible through each branch interface previously detected (*see page 19, Sending Route Reports pertaining neighbors Probe router list*).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Pusateri also discloses wherein the restricted route report consists of routes accessible through the one or more leaf interfaces of the first destination-based forwarding router (*see page 20, section B, discussion pertaining if the route already exists*).

Regarding **claim 5**, in addition to features recited in base claim 1 (see rationales discussed above), Pusateri also discloses wherein the flash update comprises an unreachable metric for the new branch interface (*"metric" and "adjusted metric" are discussed on page 19, section 3.4.6 and thereinafter*).

Regarding **claim 6**, in addition to features recited in base claim 5 (see rationales discussed above), Pusateri also discloses wherein the unreachable metric is a cost

metric having a value of 32 (*Route Metrics to include infinity or 32 are discussed on page 18, section 3.4.3 and thereinafter*).

Regarding **claim 7**, in accordance with Pusateri reference entirety, Pusateri discloses an enhanced distance vector multicast routing protocol (DVMRP) method for regulating multicast streams in a destination-based forwarding router, comprising the steps of:

(a) detecting a plurality of branch interfaces, wherein each branch interface is operably coupled to one or more neighbor multicast routers (*page 19, section 3.4.5, Sending Route Reports, it is disclosed "all of the active routes must be advertised over all interfaces with neighbors present each route report interval"*); and

(b) transmitting one or more restricted route reports to at least one of the plurality of branch interfaces, wherein at least one of the one or more restricted route reports omits one or more branch interfaces (*page 19, section 3.4.5, Sending Route Reports, it is disclosed "Flash updates reduce the chances of routing loops and black holes occurring when source networks become unreachable through a particular path. Flash updates need only contain the source networks that have changed;"* and wherein at least one of the one or more neighbor multicast routers are prevented from expressing dependency on branch interfaces of the destination-based forwarding router (*page 19, section 3.4.5, Sending Route Reports, it is also disclosed "When a router sees its own address in a neighbor probe packet for the first time, it should send a unicast copy of its entire routing table to the neighbor to reduce start-up time. Reports*

should not be sent to a neighbor until a router has seen its own address in the

neighbors Probe router list.")

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales

discussed above), Pusateri also discloses wherein the method further includes the step

of transmitting, to at least one of the plurality of branch interfaces, a flash update for

preventing at least one of the one or more neighbor multicast routers from expressing

dependency on branch interfaces of the destination-based forwarding router (*see page

20, section B, discussion pertaining if the route already exists*).

(Note: Claims 9-10 below calls for a router having all limitations mirrored the

method step of claims 1 and 5. It is therefore anticipated by the same rationales applied

to claims 1 and 5 discussed above and as followings)

Regarding **claim 9**, in accordance with Pusateri reference entirety, Pusateri

discloses an enhanced DVMRP router for regulating one or more multicast streams in a

first destination-based forwarding router, enhanced DVMRP router for:

(a) transmitting, to a first branch interface detected, a DVMRP route report

comprising routes accessible through one or more enhanced-DVMRP interfaces of

the first destination-based forwarding router (*page 19, section 3.4.5, Sending Route

Reports, it is disclosed "all of the active routes must be advertised over all interfaces

with neighbors present each route report interval"*); and

(b) for each new branch interface detected: (i) transmitting, to each branch interface previously detected, a flash update comprising an unreachable metric for the new branch interface (*page 19, section 3.4.5, Sending Route Reports, it is disclosed "Flash updates reduce the chances of routing loops and black holes occurring when source networks become unreachable through a particular path. Flash updates need only contain the source networks that have changed;"* and (ii) transmitting, to the new branch interface, a restricted route report omitting reference to routes accessible through each branch interface previously detected (*page 19, section 3.4.5, Sending Route Reports, it is also disclosed "When a router sees its own address in a neighbor probe packet for the first time, it should send a unicast copy of its entire routing table to the neighbor to reduce start-up time. Reports should not be sent to a neighbor until a router has seen its own address in the neighbors Probe router list."*)

Regarding **claim 10**, in addition to features recited in base claim 9 (see rationales discussed above), Pusateri also discloses wherein the flash update comprises an unreachable metric for the new branch interface (*"metric" and "adjusted metric" are discussed on page 19, section 3.4.6 and thereinafter*).

(*Note: Claims 11-15 below calls for a router having all limitations mirrored the method step of claims 1- 5. It is therefore anticipated by the same rationales applied to claims 1-5 discussed above and as followings*)

Regarding **claim 11**, in accordance with Pusateri reference entirety, Pusateri

discloses a computer-readable medium containing instructions for regulating one or

more multicast streams in a first destination-based forwarding router (*see page 1;*

Abstract and thereinafter), comprising the steps of:

(a) transmitting a distance vector multicast routing protocol (DVMRP) route report

to a first branch interface detected (*page 19, section 3.4.5, Sending Route Reports, it is*

disclosed "all of the active routes must be advertised over all interfaces with neighbors

present each route report interval"); and

(b) for each new branch interface detected: (i) transmitting, to each branch

interface previously detected, a flash update for preventing one or more neighbor

multicast routers from expressing dependency on the first destination-based forwarding

router (*page 19, section 3.4.5, Sending Route Reports, it is disclosed "Flash updates*

reduce the chances of routing loops and black holes occurring when source networks

become unreachable through a particular path. Flash updates need only contain the

source networks that have changed;" and (ii) transmitting, to the new branch interface, a

restricted route report for preventing one or more neighbor multicast routers from

expressing dependency on the first destination-based forwarding router (*page 19,*

section 3.4.5, Sending Route Reports, it is also disclosed "When a router sees its own

address in a neighbor probe packet for the first time, it should send a unicast copy of its

entire routing table to the neighbor to reduce start-up time. Reports should not be sent

to a neighbor until a router has seen its own address in the neighbors Probe router list.")

Regarding **claim 12**, in addition to features recited in base claim 11 (see rationales discussed above), Pusateri also discloses wherein the DVMRP route report comprises routes accessible through one or more interfaces of the first destination-based forwarding router enabled with the enhanced DVMRP method (*see page 19, section 3.4.5, Sending Route Reports pertaining the discussion of unreachable through particular path and Route Dependencies discussed on page 18, section 3.4.4 and thereinafter*).

Regarding **claim 13**, in addition to features recited in base claim 11 (see rationales discussed above), Pusateri also discloses wherein the restricted route report omits reference to routes accessible through each branch interface previously detected (*see page 19, Sending Route Reports pertaining neighbors Probe router list*).

Regarding **claim 14**, in addition to features recited in base claim 13 (see rationales discussed above), Pusateri also discloses wherein the restricted route report consists of routes accessible through the one or more leaf interfaces of the first destination-based forwarding router (*see page 20, section B, discussion pertaining if the route already exists*).

Regarding **claim 15**, in addition to features recited in base claim 11 (see rationales discussed above), Pusateri also discloses wherein the flash update comprises an unreachable metric for the new branch interface (*"metric" and "adjusted metric" are discussed on page 19, section 3.4.6 and thereinafter*).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

  Green (USP 5,517,494).

  Lemaire et al (USP 5,999,530).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

  If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

  Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 2, 2007

FRANK DUONG
PRIMARY EXAMINER